
RESEARCH ARTICLE

Investigation of COVID-19 Vulnerability concerning Built Environment in the Case of Ghazni City, Afghanistan

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ABSTRACT

The built environment exhibits a strong connection to novel diseases and viruses. Diseases have been hugely influenced in shaping cities. Nonetheless, now cities are on the front lines of the COVID-19 crisis. However, the impact of COVID-19 has, so far, been geographically and socially diverse; cities with a high concentration of urban poor and deep inequalities are potentially more vulnerable than those that are better resourced, less crowded, and more inclusive. Hence, Afghanistan, where cities have been recognized with a high concentration of urban poor and inequalities, is not exempt. Ghazni city, the capital of Ghazni province in Afghanistan, is also affected where people suffer lack of adequate infrastructure, drainage systems, and solid waste management. For residents of Ghazi City, those who live in a crowded and informal settlement and lack the proper shelter and housing, such as quarantines, staying indoors, and self-isolating, were very high challenges. Therefore, this research aims to evaluate the vulnerability of Ghazni City residents during the COVID-19 pandemic and quarantine. To reach the aim of this research, survey questionnaires have been used as an instrument for data collection to have a deep understanding of the level of access to basic services and facilities during quarantine. As well as to know whether the absence of those basic services leads to what kinds of challenges during home staying. However, the finding of this research indicates that staying home is a challenge for most of the residents. Besides, this home staying posed another problem for residents, which is the loss in income. On the other hand, almost half of the residents rent houses and shelters. Then, they were forced to leave their homes due to their inability to pay the rent.

KEYWORDS

Investigation, COVID-19, Vulnerability, Built Environment, Ghazni

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1. Introduction

The built environment exhibits a strong connection to novel diseases and viruses. In history, buildings and cities have been reimagined in response to disease (Honey-Roses et al., 2020). Diseases have been hugely influenced in shaping cities (Akar et al., 2020; Peters, 2020). Nonetheless, now cities are on the front lines of the COVID-19 crisis. However, the impact of COVID-19 has, so far, been geographically and socially diverse (Regmi, 2020); cities with a high concentration of urban poor and deep inequalities are potentially more vulnerable than those that are better resourced, less crowded, and more inclusive. Hence, Afghanistan, where cities have been recognized with a high concentration of urban poor and inequalities, is not exempt, Ghazni city, the capital of Ghazni province, is one of those affected cities.

COVID-19 originated in Wuhan, China, and has spread around the world; the first confirmed case of COVID-19 was reported on 24 February 2020 by the Ministry of Public Health of Afghanistan from the Western province of Herat (Shah et al., 2020). In efforts to curb the pandemic, initially, the travel restriction and avoiding social gatherings have been confirmed by the Afghan government

cabinet to limit the spread of COVID-19. This restriction included banning the Nowruz celebration, suspending schooling, and preventing other spring gatherings and cultural celebrations. However, later on, on 27 March 2020, the Afghan government cabinet approved the imposition of compulsory quarantine in big cities such as Kabul, Herat, Ghazni, and Mazar-e-Sharif, and the initial restriction was tightened, then the residents were forced to stay home (Shah et al., 2020). Household with proper basic hygiene facilities is figured as a place of protection during the quarantine (Abdul Rashid, 2020). Moreover, public health officials advise people to stay home and reduce contact with other people. For residents of Ghazni City, those who live in crowded and informal settlements and lack the proper shelter and housing, quarantines, staying indoors, and self-isolating were very challenging. Besides, the residents of informal settlements in Ghazni City suffer from the absence of waste management and a shortage of basic services and social facilities. Then, there is a higher risk of fast contagion for any infectious disease in such environments. Besides, without access to basic services and infrastructure, provision of drinking water, water for hand washing, reducing physical contact, and improvement of hygiene posed other challenges for both government and informal residents to curb the COVID-19 pandemic.

Therefore, the COVID-19 pandemic hits the people who live in Ghani City, where hand washing and social distancing due to minimal health facilities, shortage of waste management, lack of basic services, and poor housing are often impossible. Moreover, the economic consequences of COVID-19 for those with a low-economic background will be long-lasting. As cities suspend daily activities and restrict movements, then day laborers and workers will lose their income. This can result in people being forced to leave their homes due to their inability to pay the rent. Thus, preventing and managing COVID-19 outbreaks is most challenging for those who live in Ghazni City, where people depend on informal health facilities and use overcrowded or poorly maintained public transport systems to commute long distances between home and work. With all the above reasons, this paper aims to evaluate the vulnerability of residents of Ghazni City during the COVID-19 pandemic and quarantine.

2. Research Methodology

To collect and analyze the data for this research, certain steps were followed. Before primary data collection, the preliminary understanding contributed to gaining a comprehensive understanding of site selection. Following that, quantitative field research has been adopted for data collection. As a questionnaire is a common tool, and the data collection instrument encompasses a series of questions to acquire information on public perception and respondents (Bird, 2009). Therefore, survey questionnaires have been used as an instrument in data collection. A questionnaire survey has been conducted with residents. A different group of people, including the young, old, male, female, low-income, high-income, medium-income, different ethnic groups of people, people with different education levels, and people from different parts of Ghazni City, have been chosen for the survey. Furthermore, in terms of respondent selection, the printed survey questionnaires were distributed among people randomly to know their level of access to different facilities (waste management, water supply, drainage system, and healthcare facilities) during quarantine. As well as to know whether staying home was challenging due to the absence of basic services, whether day laborers and those in informal employment lost their income or not, and whether they used overcrowded or poorly maintained public transport systems. In addition, the Likert scale has been used to prioritize the respondent's level of access to the different facilities and their problems during quarantine. According to Azila (2015), the Likert scale rating is a psychometric response scale in the questionnaire to obtain the respondent's preferences or degree of agreement and disagreement with a statement. In Likert scales, the statement prepares, and participants are given options by which to indicate their view towards the statement. And to indicate their level of agreement or disagreement with a specific statement by way of an ordinal scale (Azila, 2015) [5]. The Likert scale must occur on 5 points scale, which includes strongly agree, agree, neutral, disagree, and strongly disagree. However, the variable of the Likert scale is related to the aim of the research, and some researchers want to ensure the validity and reliability of the research and use the 7 and 9 points scale, and some researchers use 3 points scale. However, the 5 points scale is the most prevalent rating in the Likert scale; therefore, in this research, the 5 points Likert scale has been used.

Data analysis is the following stage of this research; the gathered data has been taken under the process of examining, summarizing, and drawing a conclusion. The data quantitative data can be analyzed statically (Azila, 2015) [5]. Therefore, the gathered data has been analyzed statically. Excel computer software has been used to simply manage the data. The percentage of the responses that respondents gave to the different statements and variables has been tabulated in the form of a percentage.

The result and findings which come up after measurement by excel have been shown in the pie chart, smart chart, and diagram for better understanding. Conclusion and recommendation are the last stages of this research.

3. Result and Finding

This part of the research presents the finding and results of the data which has been obtained from the field research.

3.1 Demographic Buckhound

The Demographic background includes the demographic background of participants of the questionnaire survey referring to the age, gender, job, education level, and housing ownership. 150 questionnaires have been distrusted; however, 138 questionnaires have been returned, and 12 questionnaires have not been returned. Hence, the total number of respondents in this research is 138 respondents, including 48 females and 80 males. And in terms of age, the participants of this research include 53 persons 18-24 years old, 37 persons 25-34 years, 15 persons 35-44 years old, 18 persons 45-54 years old, 11 persons 55-64 years old and 4 persons elder than 64 years. Table 1 shows the age group of respondents in the research.

Table 1: Respondent’s age

Age Group	Number of Respondents
18-24	53
25-34	37
35-44	15
45-54	18
55-64	10
>65	5

The participants with different education levels have been chosen for this research, including uneducated people, secondary school level, high school level, religious school level, Diploma level, Master’s degree, and others. Table 2 shows the respondent’s education level.

Table 2: Respondent’s education level

Number	Education	Number of respondents
1	Ph.D. level	3
2	Master’s degree	15
3	Bachelor’s degree	42
4	High school	21
5	Secondary school	4
6	Religious School	2
7	Uneducated	24
8	Other	7

People with different jobs have been chosen for this research, including government employees, private employees, self-employed, agriculture students, and others. Figure 1 shows the Respondent’s job.

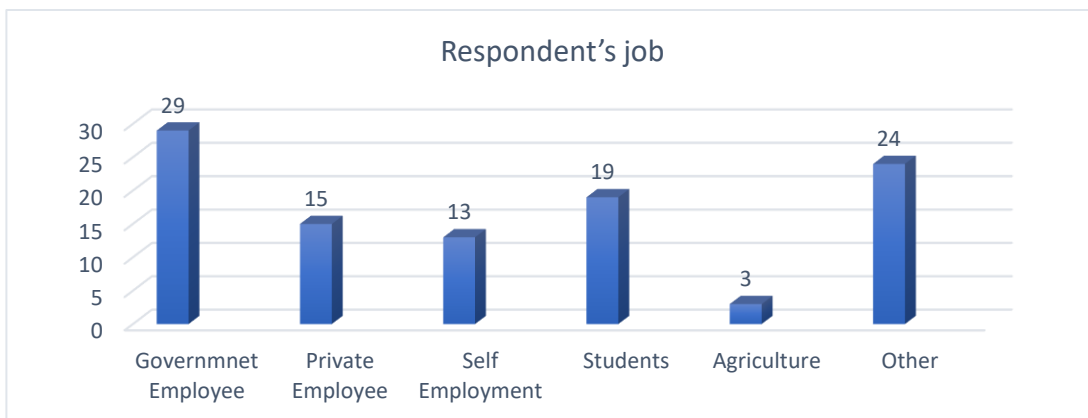


Figure 1: Respondent’s job

In terms of house ownership and property, 60 respondents indicated that they are house owners, 53 respondents stated that they rented the houses in which they live, and 25 respondents chose the other option. Figure 2 shows the house property situation of the respondents.

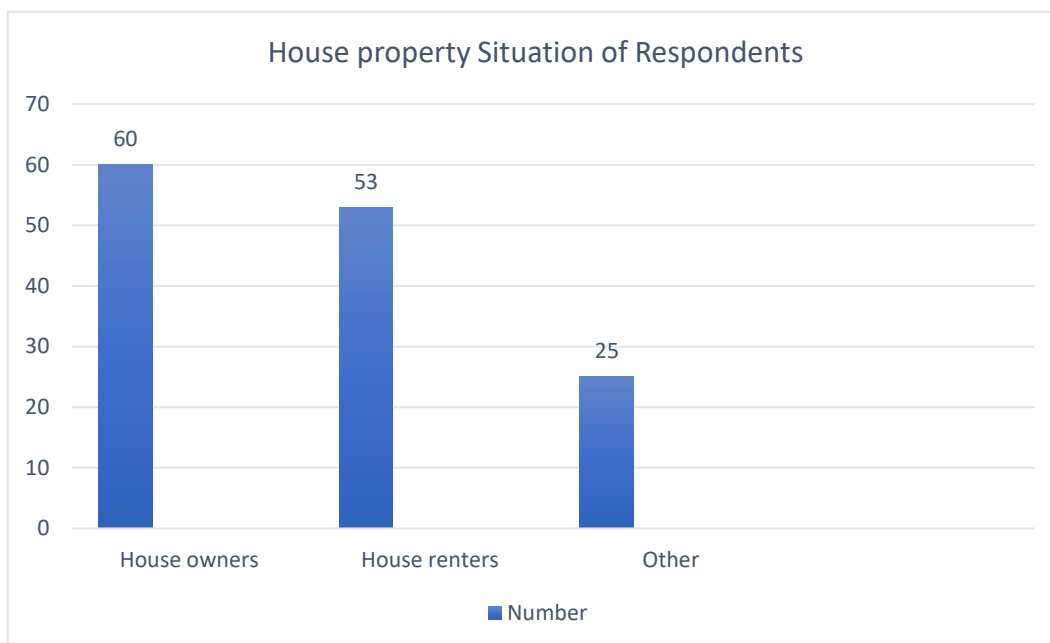


Figure 2: Respondent's house property situation

3.2 Key Findings of Questionnaire Survey

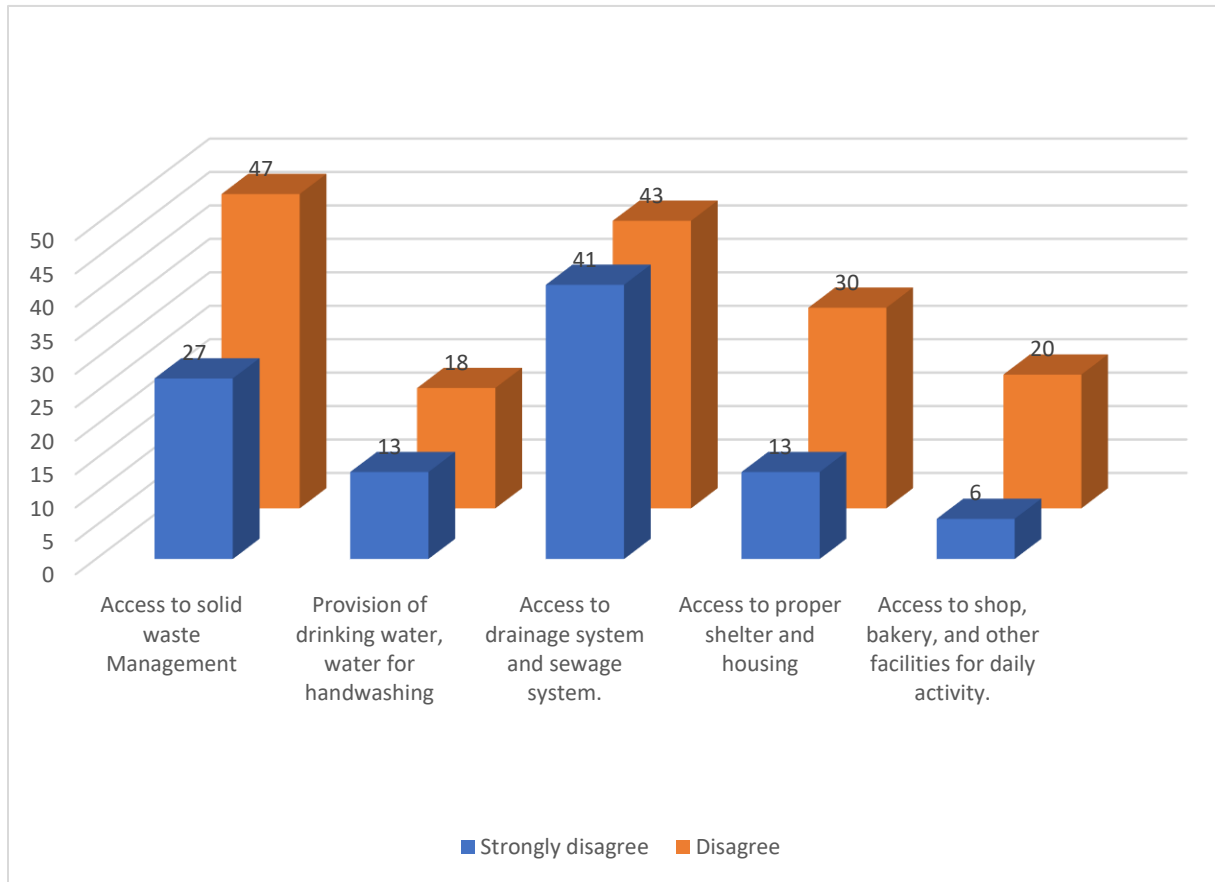
A household with proper basic hygiene facilities is figured as a place of protection during the quarantine. However, the finding of this research indicates that the respondent did not have access to proper hygiene, especially in public healthcare facilities. Table 3 shows the respondent's level of access to basic services and facilities during quarantine.

Table 3: Respondent's level of access to basic services and facilities

No	Facilities	Likert Scale				
		Strong agree	Agree	Neutral	Disagree	Strong disagree
1	Access to solid waste management	17	31	16	47	27
2	Provision of drinking water, water for handwashing	18	50	39	18	13
3	Access to the drainage system and sewage system.	13	10	30	43	41
4	Access to proper shelter and housing	15	41	39	30	13
5	Access to shops, a bakery, and other facilities for daily activity.	24	60	28	20	6

Based on Table 3, 27 respondents strongly disagree, 47 respondents disagree with access to solid waste management. 13 respondents strongly disagree, and 18 respondents disagree with access to drinking water and water for handwashing. 41 respondents strongly disagree, and 43 respondents disagree with access to drainage systems and sewage systems. 13 respondents strongly disagree, and 30 respondents disagree with access to proper shelter and housing. And 6 respondents strongly disagree, and 20 respondents disagree with accessing the shop, bakery, and other facilities for daily activity.

Figure 3: Perception of respondents on access to different basic services and public facilities



Furthermore, during the quarantine, the residents have been forced to stay home and reduce contact with other people. However, this evaluated whether such quarantines, staying indoors, and self-isolating are challenging or not. The finding of this research presents that such quarantines, staying indoors, and self-isolating are extremely challenging for residents of Ghazni City.

Table 4: Respondent's problems during the quarantine

No	Problems and Challenges	Likert Scale				
		Strong agree	Agree	Neutral	Disagree	Strong disagree
1	Staying home is a challenge due to the absence of basic services.	53	57	13	11	4
2	Day laborers and those in informal employment lost their income.	50	58	19	11	0
3	This can result in people being forced to leave their homes due to their inability to pay the rent.	45	61	16	3	5
4	Shortage of healthcare facilities, especially for COVID-19 purposes	58	60	17	14	4
5	Usage of overcrowded or poorly maintained public transport systems leads to increasing positive cases.	58	59	7	8	6

Based on Table 4, 53 respondents strongly agree, and 57 respondents agree that staying home is a challenge due to the lack of basic services and infrastructure. 50 respondents strongly agree, 58 respondents agree that quarantine can impact people to leave their homes due to their inability to pay the rent and 45 % of them strongly agreed, and 65% of them agreed that this could result in people being forced to leave their homes due to their inability to pay the rent. And 58 respondents strongly agree, and 60 respondents agree with the shortage of healthcare facilities, especially for COVID-19 purposes. As well as 58 respondents strongly agree, and 59 respondents agree that usage of overcrowded or poorly maintained public transport systems leads to increasing positive cases.

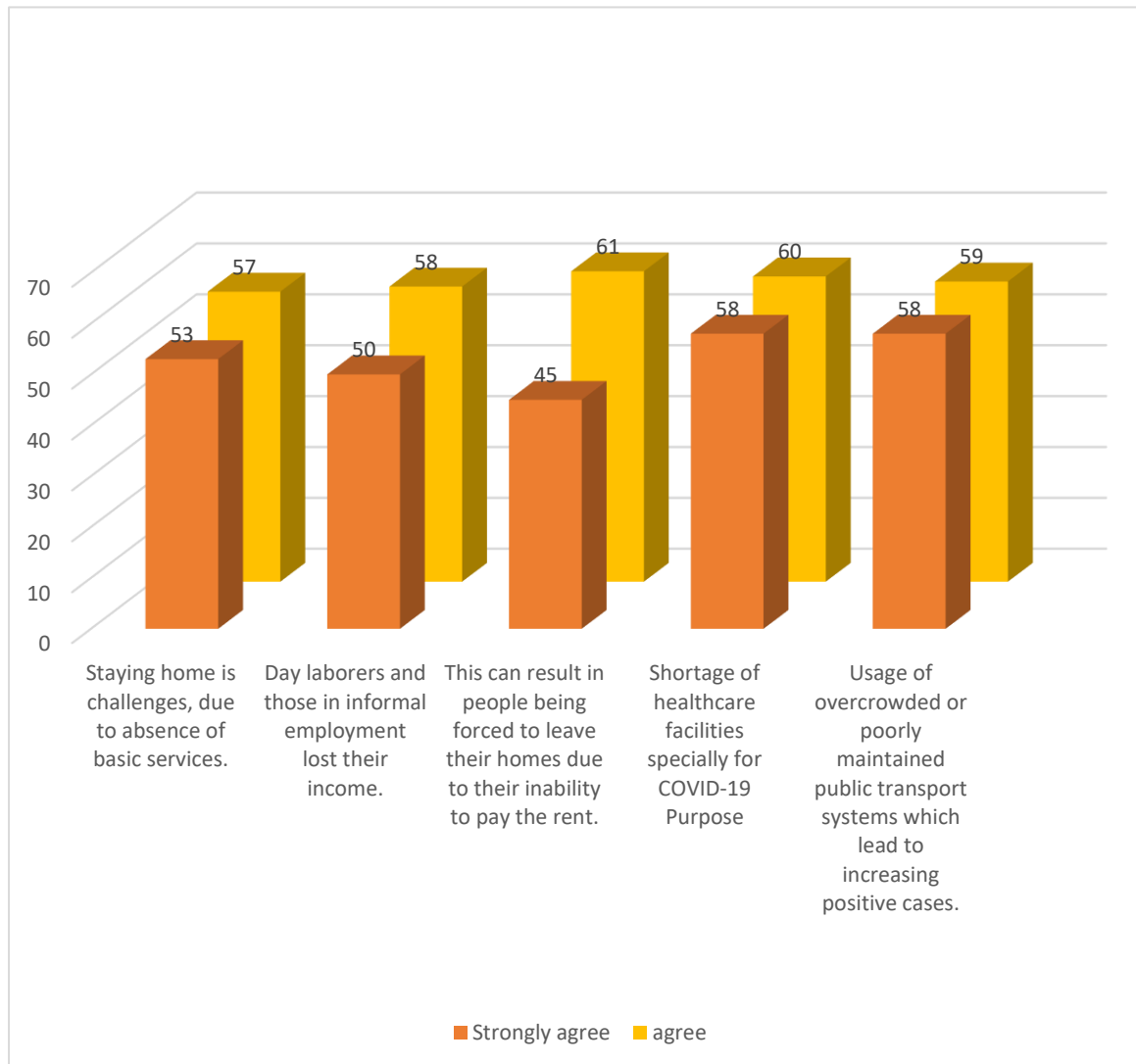


Figure 4: Perception of respondents on their problem during quarantine

5. Conclusion

Based on the finding of this research, residents of Ghazni do not have access to proper hygiene. Especially shortage of drainage systems and sewage are the most influential problems on them during Quarantine. However, the provision of the water supply system is a problem for a minority of the residents. This is because there are private companies that provide the water for small specific areas. In addition to private companies, some of the families have their water well. On the other hand, people are comfortable with access to shops, a bakery, and other facilities for daily activity.

In addition, because of the lack and shortage of basic services and hygiene facilities, staying home is challenging for the majority of the residents. This home staying posed another problem for residents of Ghazni, which is income loss. On the other hand, based on Figure 2, almost most residents rent houses and shelters. Then, almost half of the residents were forced to leave their homes due to their inability to pay the rent.

Another problem that leads to the vulnerability of residents is the shortage of healthcare facilities, especially for COVID-19 purposes. There are not enough healthcare facilities in Ghazni City. Furthermore, there are no proper transportation systems and facilities. Therefore, the usage of overcrowded and poorly maintained public transport systems leads to an increase in positive cases.

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